Lecture 10

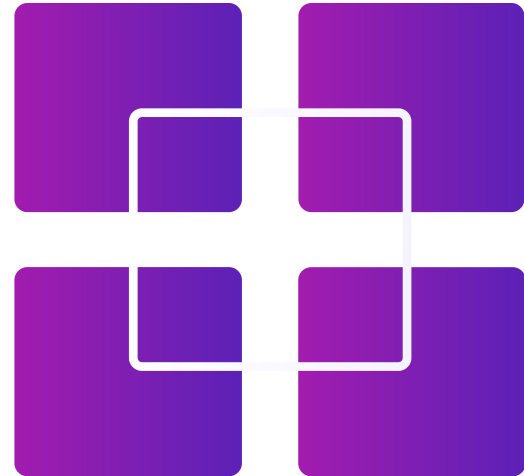**- Network analysis**
- Social Network

Agenda

○ Method: Network analysis

○ Topic: Network

    ○ Network ties (tie strength)

    ○ Network positions (broker, centrality)

    ○ Network types

    ○ Network composition (homophily)

    ○ Networking as behavior

○ Discussion

    ○ Network analysis in Network: Yang et al. (2019)

    ○ Discussion questions

○ Next class

Social vs. Human capital

Human Capital

- Degrees, certificate, training, expertise
- Human capital has become more abundant
- As information grows, specialization increases

Social Capital

- Provides vital link between even more specialized groups
- Breaks us out of our specialized limitations

Network ties

Strong ties:

- Someone who you know well (e.g., friends); information flows freely and frequently
- Similar information

Weak ties:

- Your acquaintances; tenuous relationship
- Divergent information

Network ties

The power of weak ties

- Unlike people's belief, one can greatly benefit from weak ties

- 76% of job candidates found a job through personal connections

- Most of the connections are weak ties

The strength of weak ties
MS Granovetter - American journal of sociology, 1973 - journals.uchicago.edu
… on **the** cohesive power of **weak ties**. Most network models deal, implicitly, with strong **ties**,
thus confining their applicability to small, well-defined groups. Emphasis on **weak ties** lends …
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Network ties

How to measure the "strength" of ties

- Frequency of communication
- When was the last time you communicated with this person?
- Email/ message/ chat data (or self-report)
- Hard to access a very good dataset that does not rely on self-report
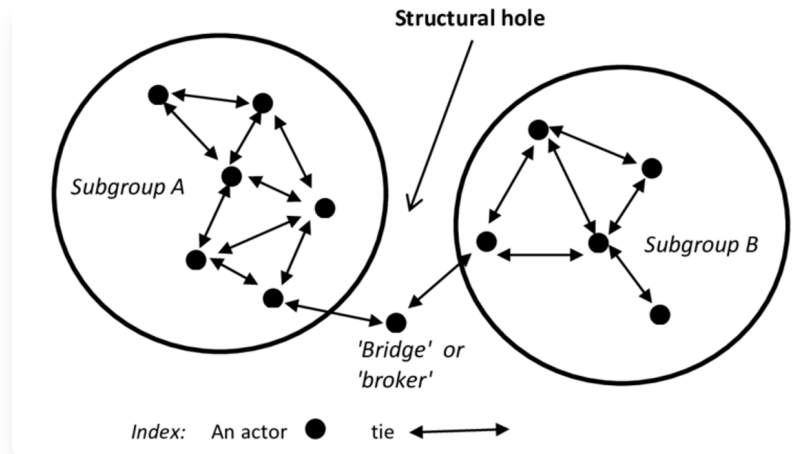
Network position

- Position: Where you stand in your network?
- Network centrality: How central are you in your network?
- Broker: A mediator between two or more closely connected groups
  - Transfer valuable information from one group to another
  - Combine all the ideas from different sources
  - Possible downside: maintaining a broker role can be time consuming

Network position

The power of brokerage

- Creativity by filling out the "structural hole" (good ideas!)
- Compensation
- Performance evaluation
- Promotions

Network position

How to measure the position in network

- Network map (e.g., Pagerank), often quite computational

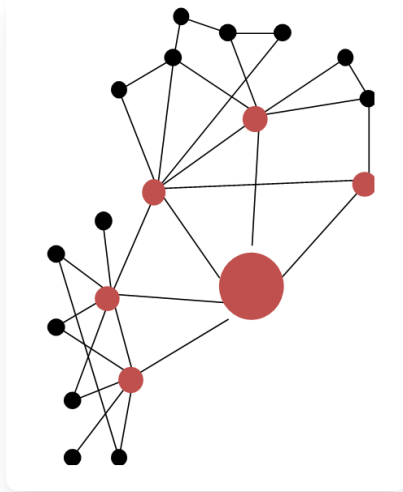- Mapping one's ties is often necessary to see where one stands

- Draw one for yourself!

Types of network

- Clique network
- Entrepreneurial network
- Rainmaker network

Types of network

Clique network

- Most members are directly linked to each other

- Few or no structural holes

- High cohesion
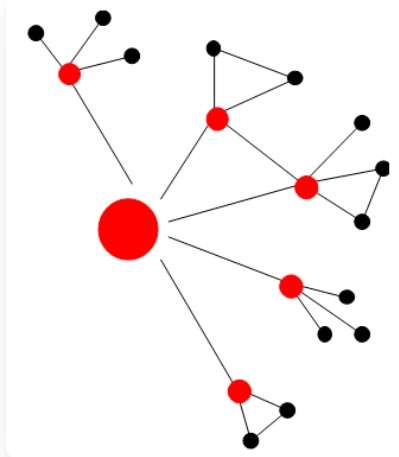
Types of network

Clique network

- Maximizes team cooperation and reciprocity

- Promotes trust

- Provides clear normative expectations

- Facilitates implementation & execution

Types of network

Entrepreneurial network

- An individual bridges across "structural holes,"

- Connecting individuals or groups that would otherwise not be connected

Types of network

Entrepreneurial network

- Access to novel & diverse information

- Increases innovation and creativity

- Brokerage & control opportunities

- Integration across groups

- Career advancement

Types of network

Rainmaker network (as an organization!)

- Combines the benefits of BOTH CLIQUE AND ENTREPRENEURIAL NETWORKS
- Clique networks are used for "Production"
- Entrepreneurial network are used for Marketing and Distribution

Rainmaker
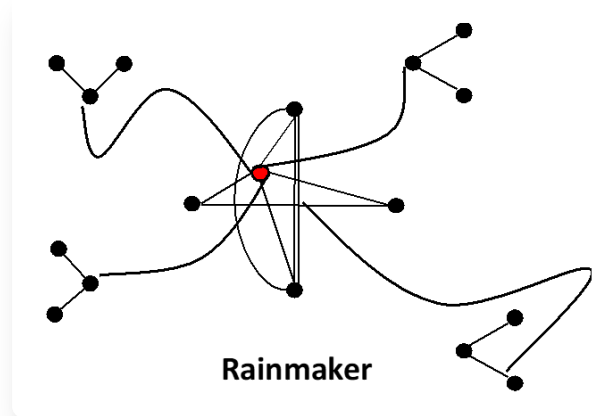
Network composition

- Who constitutes your network?
- Homophily: How similar are your contacts are to each other?
- Demographic (e.g., gender, racial), socio-economic, etc.
- Professional (e.g., department)
- Tend to be negatively correlated with performance

Network composition

"Going out of your way", naturally people form:

- Network with strong ties

- Clique network

- Network without structure holes

- Network with high homophily

Networking as behavior

○ Building "instrumental" ties?

○ Personal networking vs. instrumental networking

○ Network in pursuit of friendship/ support vs. network with professional goals

○ Feeling discomfort of networking behavior (Casciaro et al. 2014)

Networking as behavior

- Feeling "dirty", or morally impure

- Decrease frequency of instrumental networking

- Decrease work performance

- Solutions?

Network analysis in Network: Yang et al. (2019)

Next Class